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ABSTRACT

This is the final report of one phase of a project to improve occupational education in communities changing from a predominately agrarian economy to a more industrialized, diversified economy. This phase of the project studied the extent to which the educational programs in the school system reflected changes appropriate to preparing persons for existing occupations. Data from surveys of key employers as to the expected need for workers in various occupational categories and from surveys of the vocational offerings in the public schools and technical institutes were analyzed. It was found that: (1) The occupations for which vocational training is appropriate have increased at a rate exceeding the growth rate of the population, (2) Vocational offerings at the high school level are appropriate to only 25 percent of the jobs in the manpower structure and offerings at the technical institute are appropriate to only 16 percent, and (3) There is little coordination between the business community and the schools in planning for programs appropriate to emerging economic and social changes in the area studied. In view of the findings, it was recommended that there be a reorientation of the curriculum toward realistic occupational goals to meet business and industrial needs. Related documents are available as ED 055 223 and ED 067 455. (MF)

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EDUCATION AND MANPOWER

CHARLES I. JONES
CENTER FOR OCCUPATIONAL EDUCATION

CENTER RESEARCH AND DEVELOPMENT REPORT NO. 14

CENTER FOR OCCUPATIONAL EDUCATION
NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
1972

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EDUCATION AND MANPOWER

Charles I. Jones

Center for Occupational Education

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Center Research and Development Report No. 14

Center for Occupational Education
North Carolina State University at Raleigh

1972

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PREFACE

This is the final report of one phase of a larger project entitled "Occupational Education in Areas of Social and Economic Transition." An earlier Center Research and Development Report explored the topic of the relationship between community power and social change (Teague, 1969). A Center Research Monograph demonstrated a systems approach to the phenomenon of areas in economic transition (Drewes, 1969). The ultimate goal of the overall project was to improve the quality and quantity of occupational education in communities that are undergoing a transition from a predominately agrarian economy to a more industrialized, diversified economy. As changes in the economic base occur, it appears reasonable to speculate that concomitant occupational skill demands also change. The presently reported phase of the project is a study of the extent to which the educational programs in the school system under investigation reflect changes appropriate to preparing persons for the occupations that exist within the target county.

The Center acknowledges the work of Dr. Jones and expresses appreciation for his contribution to the investigation of occupational education as it is practiced in the specific school system. The author and the Center wish to thank the following people for their assistance in reviewing this report prior to its publication: Dr. Joe R. Clary, Executive Director of the State Advisory Council on Vocational Education, and Dr. Selz C. Mayo, Head of the Department of Sociology and Anthropology at North Carolina State University.

Lastly, appreciation is expressed to the entire Center editorial, clerical, and technical staff, particularly Mrs. Sue King and Mrs. Olive Maynard, for their efforts toward the preparation and publication of this report.

John K. Coster
Director

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INTRODUCTION

Problem

There are two major elements to be considered in a study of communities in social and economic transition. Specifically, these are:

1. A description of the economic structure of the community with particular emphasis upon projecting manpower needs for specific occupations, asking such questions as

   a. What is the nature of the present occupational structure?

   b. To what extent do realistic estimates of needs in specific occupations appear possible?

2. A study of the school system, with particular attention to the place of vocational education in the total school system, the nature and quality of vocational education programs, and the relationship of the program of the area vocational school to that of the local school system.

In summary, what is proposed here is an extensive and comprehensive interdisciplinary community study of a small city and its nearby satellite communities. More specifically, it is an attempt to understand the school system (and especially vocational education) within the community context.

Since it is recognized that the education of people in any given community may affect the manpower supply in the region or nation as a result of migration, this study is directed toward answering the following questions:

1. What changes have occurred in the occupational characteristics of the population during the transitional period from a predominately agrarian to a more industrialized, diversified economy?

2. To what extent are these changes manifested in the occupational education programs in the country?

3. To what extent have occupational education programs been changed and/or developed that are congruent with the emerging economic and social changes in the county?

Review of Literature

There is wide recognition in the literature of occupational education of the need for training appropriate to the manpower structure generated in the economic institutions of the community, the region, and the nation.

Ginzberg (1965) states that there is a growing awareness that the economic well-being of business and industrial firms in a locality depends to a marked degree upon the skill level of the population. The validity of Ginzberg's argument in areas such as Wilson County may rest on the degree to which the appetite of the business and industrial firms for skilled workers is satisfied by the production of workers possessing the necessary characteristics.

Folger (1966) states that where economic and manpower forecasts are developed as a part of state or institution (educational) planning, they are often used as a justification that planned expansion will be wise. Ginzberg supports Folger's argument, stating that communities with good schools increasingly have the advantage in attracting industries demanding trained personnel. Industries using a high proportion of easily trained workers will likely locate in low-tax and low-wage areas. Ginzberg concludes that there is a need for much closer liaison among government, industry, trade unions, and the education received in high schools and community colleges. There will be, he continues, a contining strong demand for a high quality of technological manpower.

Hamel (1966) supports Ginzberg's plea for more highly trained manpower, showing that the average education attainment of the 1966 worker was more than four years of high school--a rise from just one year in 1940. About 58 percent of workers entering the labor market today have completed high school.

Arnstein (1965) states that it is relatively easy to secure agreement on the need for more and better education. One finds little opposition to preparing both young and old to fill unfilled jobs. What services will the schools perform in the preparation of people for filling the jobs? Haskew and Tumlin (1965) paraphrase the question of the extent to which the common school shall be a service agency for local employers by providing training for employers at public expense. They argue that the "impending transformation of the common school is toward a realisitic acceptance of talent utilization as an outcome to be achieved."

What, then, is to be the relationship between the schools and the personnel-consuming businesses, industry, and governmental organizations? Arnstein (1965) states that "vocational education, to be effective, must be related to the labor market," and that vocational education has been slow in adapting to changing needs. The concepts presently used to mark the boundaries of vocational education were formulated about the time of World War 1. There is an urgency for educational change based on new attitudes, and this urgency results from the rapidity of technical and social change.

The Vidalia community is a community in social and economic transition. In such a situation, Evans and Arnstein (1962) predict that economic advantage will accrue to the individual acquiring the kind of fundamental training that will enable him to qualify and shift among several occupational categories.

According to Burt (1967) there is a general unanimity among educators and industry leaders regarding the desirability derived through cooperative effort in the development and conduct of vocational offerings in local school systems. When industry and education ignore each, the student and the community are cheated while industry must provide in-plant training. The public then pays twice--once for ineffective schools and again for the expense of poorly trained workmen in industry.

Manpower skill surveys provide a basis for determining the types and kinds of vocational and technical programs that should be provided. Walsh and Selden (1965) suggest that for the purposes of including occupational areas in program planning, determinations are based on manpower requirements and labor market information. The manpower survey must include the entire constellation of occupations accounting for employment, actual and potential. Manpower demands in relation to the sources available for replacement and expansion define the training problem.

> The role of the employer and the manpower specialists of the employment service, in cooperation with educators, is pointed out by Shoemaker. To establish a new program or to expand an existing program, certain facts must be gathered and considered. One very obvious fact that must be considered is the number of people employed in principal occupations in the area to be served by the vocational program . . . the information on employment in occupations can be obtained only from employers, unless the State Employment Service has conducted a skills survey in the area to be served by the vocational program. Such skill surveys by the State Employment Service are of great value in establishing sound programs. If a skills survey is not available, a sampling technique can be used by educators to cut down the time and effort involved in a total skills survey. (Walsh and Selden, 1965)

Walsh and Selden state that a balanced program of vocational education considers probable future requirements and projected supply, while Hay (1963) argues that no businessman can tell you today what his exact requirements for labor will be six months or a year from now. In addition, Arnstein argues that no matter how difficult it may be to make forecasts, the attempt is still necessary, though not definitive; they must be the basis for future planning.

Traditionally, the job forecasts have been made as a projection of the past. Michael (1962) argues that while the employment outlook in service industries is better than in some other areas, service activities will tend to displace workers by becoming cybernated. Again,

Arnstein (1965) states that the Bureau of Labor Statistics is the primary source of most of our labor forecasts. Its publications deserve greater exposure among school personnel.

According to Zack (1965), difficulties in the prediction of job opportunities stem from automation as well as from the development of new industries. The responsibility for organizing programs of vocational-technical education is on the schools and industry. Further difficulty, states Zack, arises from the reluctance of labor unions to honor any vocational training which threatens apprenticeship programs or the recruiting of labor.

Burt (1962) reports that a major weakness of manpower surveys in the Pittsburgh area was the failure of employers to project expansion needs. The Upjohn Institute for Employment Research found that a minority of manufacturers made careful and comprehensive employment projections.

In spite of the problems encountered in determining a solid basis on which to plan vocational-technical programs, McClure (1965) places the responsibility for financing manpower training on the local community. He contends that high priority tends to be placed on programs that train people for local employment, while youth and adults seeking employment outside the local community will find a low priority attached to their appropriate training. Burt (1962) says, "McClure contrasts this [with the] attitude toward college preparatory courses in the high schools for students who leave the community. This," he concludes, "is the character of provincialism. Another kind of provincialism occurring frequently is the establishment of training programs in a community without regard to the training given by other institutions."

In summary, the literature reviewed identifies seven aspects of the development of vocational-technical educational programs in the public schools and community colleges.

1. There is a need for cooperation between the businesses, industries, and governmental organizations and the local institutions training people for jobs within these organizations.

2. Communities with good schools have the advantage in attracting industries demanding trained personnel.

3. The average educational attainment of today's worker is more than four years of high school.

4. Manpower surveys provide a basis for determining the types and kinds of vocational-technical programs to be conducted.

5. Businessmen have difficulty in predicting labor needs.

6. The responsibility for financing and conducting manpower training rests on the local community.

7. Adults and youth who leave the community usually will find a low priority given to providing training relevant to their needs.

Theoretical Framework

The literature reviewed places the responsibility for manpower training with the community and suggests that adequate planning for this training demands cooperation between the business, industrial and governmental organizations and the institutions producing people trained to perform the tasks necessary for the maintenance of the economic structure. Loomis (1960) and others have brought these relationships into focus in the social system approach to the organization of the community. The specific components of the social system approach which appear appropriate to this section of the study are the community functions of socialization through community institutions; in this case, the schools that serve as the vehicles through which these functions are performed.

As described in the literature of the social system approach to community analysis, the function of socialization is essential for community newcomers to become worthy members of the social order. In a society such as in the United States, the work ethic demands that to become a worthy member of society, the newcomer must become a functioning member of the economic institutions in the community. To become a functioning member of the economic institutions, the newcomer must gain skills that are essential to the maintenance of those institutions. The theoretical framework in which this study is set is the social system concept.

Hypotheses

Ultimately this study proposes to discover the relationship of the educational system programs in the community's educational institutions to the manpower structure or skill demands within the community's economic institutions.

To develop an adequate perspective of the relationship between the educational and economic institutions in the community requires attention to the historical development of the particular institutional characteristics appropriate to the focus of this study. The relevance of the historical perspective lies in the changes occurring in the occupational characteristics of the population and the accompanying changes occurring in the vocational offerings of the public schools and technical institutes appropriate to the demands for trained personnel.

Using the social system approach, with specific emphasis on the relationship between the public schools and the employers in the economic institutions, the following hypotheses were constructed for this study:

1. The historical development of occupational education offerings in the public schools and technical institutes does not appear to reflect the need for the training demanded by the manpower requirements, as the economy has changed from basic agrarian to industrial characteristics.

2. The grade level attained by students in the public schools suggests that the occupational education programs are available to only a limited proportion of students.

3. Some industrial, business, and government agencies find it necessary to provide their own training programs.

Using these hypotheses as a basis for organizing the data, this study proposes to discover and report the extent to which educational programs supported by the community reflect changes appropriate to preparing people for the world of work and, more specifically, for occupations that exist within the economic institutions of the county.

METHODOLOGY

Organization of the Study

Five basic areas in achieving the objectives of this study were identified for investigation.

1. Changes in the occupational characteristics of the population of Wilson County from 1940 to 1960 by ten-year intervals.

2. The present manpower structure, as determined by the occupations presently required by key employers in 1968.

3. Changes in the kinds and types of vocational offerings in the public schools and technical institutes between 1940 and 1968.

4. The grade level achievement of public school students.

5. The characteristics of training programs conducted by the business, industry, and government sectors of the economy.

Occupational Categories

The occupational characteristics of the population have been divided into twelve categories by the U. S. Bureau of the Census:

1. professional, technical, and kindred workers
2. farmers and farm managers
3. proprietors, managers, and officials, except farmers
4. clerical, sales, and kindred workers
5. craftsmen, foremen, and kindred workers
6. operatives and kindred workers
7. domestic service workers
8. service workers, except domestic
9. farm laborers and farm foremen
10. farm laborers - unpaid family workers

11. laborers, except farm

12. occupation not reported

The data for describing the occupational characteristics of the population were obtained from the U. S. Bureau of Census reports for 1940, 1950, and 1960. In addition, the occupations described in the key employer survey in 1967 were also classified for identification with the appropriate categories as described by the Bureau of Census.

Key Employers Survey

The manpower structure and the business and industry training programs are determined through structured interviews with each of the key industrial, governmental, and business firms or agencies within the county. For these interviews, local people are hired on an interview basis to visit each firm or agency. Prior to beginning the interviews, a three-hour training session is conducted by the principal investigator in order to acquaint interviewers with the forms and with the procedures to follow in contacting the employers and in conducting interviews.

The forms used for recording the data relevant to the occupations and the business and industry training program are included in Appendix F. Each form was tested by research assistants and reconstructed to effect efficient administration. Form 1126 was used to determine the occupations current within each firm or organization, and the number of people employed in each job classification. This form also provided for obtaining information from employers relative to the number of additional people each firm expected to hire in each of the occupational categories within the next five years.

Information on predicted additions was, as described by Burt (1967), Gay (1963), and Zack (1965), acquired on an erratic basis. The data on the expected need for workers included in the analysis of data were secured as suggested by Arnstein (1965) and Shoemaker (1965) from the following Employment Security Commission of North Carolina reports.

Employment Outlook for Selected Occupations in North Carolina 1966 - 1970

North Carolina Study of Manpower and Training Needs for Health and Medical Service Occupations

The Dictionary of Occupational Titles - numerical designations assigned after job titles were determined.

The business and industry training survey forms were administered during the same interview in which the occupational information was obtained. This interview form was redesigned from a similar form constructed by the principal investigator for a survey of business and

industry training in the State of Florida during the summer of 1964. This form, designated number 1127, is included in Appendix F.

School System Survey

Data appropriate to describing the vocational offerings in the public schools and the technical institutes between 1940 and 1968 were obtained from the records of the Vocational Education Division, North Carolina Department of Public Instruction. The descriptions of the courses offered were obtained from the statistical sections by the North Carolina Department of Public Instruction and the Department of Community Colleges. Descriptions of the high school-level courses' contents were obtained from the Program of Studies for Elementary and Secondary Schools of North Carolina, North Carolina Department of Public Instruction, Publication No. 381, Raleigh, North Carolina, 1964-65. The Counselor's Guide, North Carolina Department of Community Colleges, 1966-67, was the source of the description of courses offered by Wilson Technical Institute.

A measure of the grade level achievement of the public school students was conceived as the number of students surviving each grade level appropriate to the years for which this study was being conducted. Data for the grade level achievement were obtained from the statistical section of the North Carolina Department of Public Instruction.

Analysis of the Data

As suggested in the project proposal and the objectives of this study, the data as collected were primarily for the purpose of supporting the sections of study related to the power structure, the characteristics of the population, and the economic structure. The data in this particular section of the study are presented in a descriptive manner. The conclusions to be drawn in this particular section are relevant only to the two phases of the study presented here.

Further analysis of the data may be appropriate after all relevant data on the entire project are made available. Generalizations related to the ultimate goal of the project will be deemed appropriate only after an analysis of concomitant project data is made.

PRESENTATION OF THE DATA

This phase of the overall "Areas in Economic Transition" project is a study of the extent to which educational programs, supported by the community, reflect changes appropriate to preparing people for the occupations that exist within the economic institutions of the county. It is directed toward answering the following questions:

1. What changes have occurred in the occupational characteristics of the population during the transitional period from a predominately agrarian to a more industrialized diversified economy?

2. To what extent are these changes manifested in the occupational education programs in the county?

3. To what extent have the occupational education programs changed and/or developed at are congruent with the emerging economical and social changes in the county?

In order to synthesize answers to these questions, six areas related to the objectives were identified for investigation:

1. Changes in the occupational characteristics of the population of Wilson County from 1940 to 1960.

2. The manpower structure of key employers, 1968.

3. Changes in the kinds and types of vocational offerings in the public schools and technical institute between 1940 and 1968.

4. The relationship of available vocational training to the jobs in the manpower structure.

5. Characteristics of training programs conducted by the business, industrial, and governmental sectors of economy.

6. The grade level achievement of the public schools students.

The Manpower Structure

The occupational characteristics of the population of Wilson County for the years 1940, 1950 and 1960 are shown in Table 1. For all of the occupations combined the total number of jobs in Wilson County increased by 33.3 percent over the 20-year period. The greatest increase was in the category of operative and kindred workers which increased by 166.2 percent. The clerical, sales, and kindred workers increased by 145.1 percent and service workers, except domestic workers, increased by approximately 108.8 percent during that period; while, professional, technical,

Table 1. Occupational Characteristics of the Population, 1940, 1950, 1960

Occupational Description	Number of Jobs By Ten Year Intervals*						Change in Jobs	
	1940	% Jobs Reported	1950	% Jobs Reported	1960	% Jobs Reported	Total Nos. 1940-1960	% Change
Professional, Tech. Kindred Workers	744	4.95	1107	5.86	1456	7.75	+ 682	+ 91.8
Farmers & Farm Managers	4465	28.56	3948	20.90	2545	13.54	1920	43.0
Prop., Mgr., Off. (Except Farms)	894	5.71	1281	6.78	1292	6.87	+ 398	+ 46.7
Clerical, Sales & Kindred	1255	8.02	2315	12.26	3083	16.41	+1828	+145.1
Craftsmen, Foremen, Kindred Workers	832	5.32	1664	8.81	2034	10.82	+1202	+ 69.2
Operatives, Kindred Workers	1067	6.82	2046	10.83	2834	15.08	+1767	+166.2
Domestic Service Workers	1158	7.40	938	4.96	1315	7.00	+ 157	+ 13.5
Service Workers (Except Domestic)	696	4.45	993	5.25	1473	7.84	+ 777	+108.8
Farm Laborers, Farm Foremen	1569	10.03	2067	10.94	1796	9.56	+ 227	+ 14.6
Farm Laborers, U.-paid Family Workers	1863	11.91	1512	6.43	(Not Reported)			
Laborers, (Except Farm)	869	5.55	771	4.08	956	5.08	+ 87	+ 10.0
Occupations not Reported	189	1.20	239	1.26	(Not Reported)			
TOTAL	15,631		18,881		18,784		+5205**	+ 27.7***

*U. S. Bureau of Census: 1940, 1950, 1960.
**This represents total only for categories reported.
***Based on categories reported 1940-1960.

and kindred workers increased by 91.8 percent. Proprietors, managers, and officials increased by 46.7 percent. The rate of increase in each of these categories was greater than the 33.3 percent increase in the number of jobs in the entire manpower structure.

Three occupational categories showed an increase over the 20-year period at a rate less than the rate of increase for all jobs combined. These categories were farm laborers and farm foremen, domestic service workers and laborers--except farm.

The occupational categories exhibiting a growth rate exceeding the overall growth rate make up 54.7 percent of all occupations, while those categories exhibiting a growth rate less than the growth rate of the total number of jobs make up 21.7 percent of the occupational categories.

It is interesting to note that the categories showing the largest increase in percentages of the total number of jobs were those jobs requiring vocational training such as clerical, sales, and kindred workers; craftsman, foreman, and kindred workers; operatives and kindred workers; and service workers--except domestic--while the categories that are generally called "labor group" categories such as farm laborers, except farm, and domestic service workers increased at a rate slower than the increase in the total number of jobs. Special attention should also be given to the rate of increase of occupations that are in the professional, technical, and kindred workers categories, since many of these jobs are commonly within the group for which vocational technical training is offered.

Key Employers Survey

The manpower structure is presented in Table 2 by occupational characteristics categories as described in the U. S. Census. Since these categories are not detailed sufficiently for analyzing the training requirements that are appropriate, the manpower structure has also been established by DOT classifications. Job titles, with the number of people presently employed in each category, are found in Appendix A.

A detailed description of the occupations and the numbers of people employed in these occupations for Wilson County is deemed essential for making comparisons with the vocational and technical curriculum provided in the educational institutions of the county. Table 5 shows a breakdown of the occupations of the DOT classifications and the types of vocational-technical courses that are presently offered in the public schools and technical institutes that are appropriate to the particular job classifications. Only those occupational clusters for which vocational-technical training is appropriate are included in this table.

The professional occupations for which a four-year college training program is required have been omitted since by description the vocational and technical training must be less than college grade if it is to be supported by federal funds.

Table 2. Occupation Reported in the Key Employers Survey, 1967

Occupational Description	Jobs Reported	Percentage of Jobs Reported
Professional, technical and kindred workers	1,585	11.35
Farmers and farm managers farm laborers	3,475	24.89
Proprietors, managers, and officials	1,036	7.42
Clerical sales and kindred workers	1,951	13.97
Craftsmen, foremen and kindred workers	2,315	16.58
Operatives and kindred workers	1,336	7.55
Service workers, except domestic	1,002	7.17
Laborers, except farm	1,260	9.02
TOTAL	13,960	100.00

A total of 9,907 jobs are included in the occupational clusters for which vocational training is appropriate. These job clusters comprise 87 percent of the job positions found with the manpower structure of the key employers of Wilson County.

Vocational-Technical Offerings

In order to put the relationship of the manpower structure and the educational program into perspective, it appears appropriate to present the historical developments of occupational educational offerings in the public schools and the technical institutes along with the present offerings of these institutions. Table 3 shows the offerings by ten-year intervals beginning with 1940. A comparison of these offerings and the developing need for training is suggested in the following hypothesis:

Table 3. Historical Development of Vocational Education in Wilson County

High Schools	Vocational Courses Taught			
	1940	1950	1960	1967
Lee Woodard	Vo-Ag Home Ec.	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. I.V.-Business
Lucama	Vo-Ag Home Ec.	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. I.V.-Business
Rock Ridge	Vo-Ag Home Ec.	Vo-Ag Home Ec. Business	Vo-Ag-Bus. Home Ec. Bricklaying	Vo-Ag Home Ec. I.V.-Business
Saratoga Central	Vo-Ag Home Ec.	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. I.V.-Business
Speight	Home Ec.	Home Ec. Vo-Ag Business	Home Ec. Vo-Ag Business	Home Ec. Vo-Ag I.V.-Business
Springfield		Vo-Ag Business	Vo-Ag Business	Vo-Ag Home Ec. I.V.-Business
Stantonsburgh	Vo-Ag	Vo-Ag Business	*	*
Gardners	Vo-Ag	Vo-Ag Business	*	*
Williamson		Vo-Ag Business	*	*
C. H. Darden		Business	Bricklaying Business	Bricklaying Home Ec. I.V.-Business
Fike		I.C.T. Business	I.C.T. Business	I.C.T. Home Ec. Business
Frederick Douglas		Vo-Ag Business	Vo-Ag Home Ec. Business	Vo-Ag Home Ec. I.V.-Business
Elm City	Vo-Ag Home Ec.	Vo-Ag Home Ec. Business	Vo-Ag-Bus. Home Ec. Br.laying ½	Vo-Ag Home Ec. I.V.-Business
C.L. Coon				I.V. Business

*Absorbed in Consolidation.

The historical development of occupational educational offerings in the public schools and the technical institutes does not appear to reflect the need for the change demanded by the manpower requirements as the economy has changed from basic agrarian to industrial characteristics.

By 1940 seven of the Wilson County schools had established vocational agriculture as a course. Six were providing home economics education, and two were providing some form of business education. By 1950 eleven schools in the county were providing training in vocational agriculture, six were providing home economics education, and thirteen were providing business education in some form. In addition, one school had established industrial cooperative training.

By 1960 three schools had been absorbed through consolidation. Of the remaining high schools, eight schools offered vocational agriculture education and eleven schools offered home economic education. Ten schools offered business education. The industrial cooperative training program was continued at the single school in which it was offered in 1950 and one-half unit of bricklaying was offered in another school.

No significant changes were made in the vocational education offering of the public schools in Wilson County between 1960 and 1967 with the exception of adding Introduction to Vocations in ten schools. The offering of Introduction to Vocations in these schools was constrained by the fact that it comprised a single period each day taught by either the vocational agriculture teacher or the home economics teacher in the respective schools. A description of the course content in each course offered in 1967 may be found in Appendix B.

The offerings in the technical institute for the spring quarter 1967 are shown in Table 4. The description of the vocational-technical curriculum offering is provided in Appendix C.

The Place of Vocational Education

One description of the place of vocational education is the relationship between the number and kinds of jobs existing in the manpower structure that require some type of occupational training and the offerings in the public schools and technical institutes of the county. This relationship is shown in Table 5. Thirty-five occupational clusters encompassing 9,907 job positions or 87 percent of the total number of jobs within the manpower structure of Wilson County comprise occupational clusters for which vocational-technical education is appropriate.

Vocational offerings at the high school level are appropriate to 25 percent of the occupations within the manpower structure and such offerings have not changed substantially during the preceding 27 years. The vocational-technical courses at the Wilson Technical Institute are appropriate to 16 percent of the job positions within the manpower structure.

Table 4. Wilson County Technical Institute Curriculum Offerings, 1966-67

Technical

Agricultural and Biological Technologies
- Agricultural Equipment

Business Technologies
- Accounting
- Secretarial Executive

Engineering Technologies
- Air Conditioning and Refrigeration
- Drafting and Design
- Electronics

Special Technologies
- Transportation

Vocational - (Trade Courses)

- Auto Mechanics
- Machinist
- Practical Nursing (Tarboro)
- Welding
- Heavy Equipment Operator

Table 5. A Comparison of Occupations and Vocational Training Offered

D.O.T. Classification	Occupational Cluster Titles	No. of Jobs	VOCATIONAL-TECHNICAL COURSE OFFERINGS	
			Public Schools	Technical Institutes
201-209	Secretarial and Office Occupations	437	Business Education	T-30 Secretarial Executive
210-219	Computing and Account Recording Occupations	458	Bookkeeping	T-16 Accounting
220-223	Material and Production Recording Occupations	210		
261-289	Sales and Sales Persons, Commodities	574		
290-299	Merchandizing Occupations	158		
310-319	Food and Beverage Preparation and Service	309		
320-324	Inn Keeper	55		
332	Cosmotologist	31		
355-359	Attendants, Hospitals etc., and Personal Service	153		
361-369	Apparel and Furnishing-Service Occupations	81		
372-379	Building and Related Service Occupations	99		

Table 5 (continued)

D.O.T. Classification	Occupational Cluster Titles	No. of Jobs	VOCATIONAL-TECHNICAL COURSE OFFERINGS	
			Public Schools	Technical Institutes
407-422	Farming Occupations	2,215	Vocational Agriculture (8)	
520-529	Occupations in Processing Food, Tobacco and Related Products	1,843		
542-559	Occupations in Processing Chemicals	34		
570-579	Occupations in Processing Stone, Clay, etc.	45		
600-609	Metal Machine Occupations	85		V-32 Machinist
620-638	Mechanics and Machinery Repairman	269		V-03 Auto Mechanics
650-659	Printing Occupations	28		
660-677	Wood Machine Occupations	124		
691-699	Machine Trade Occupations	132		
704-709	Occupations in Fabrication, Assembly and Repair of Metal Products	27		

Table 5 (continued)

D.O.T. Classification	Occupational Cluster Titles	No. of Jobs	VOCATIONAL TECHNICAL COURSE OFFERINGS	
			Public Schools	Technical Institutes
710-715	Occupations in Fabrication, Assembly and Repair of Scientific Equipment	20		
723-728	Occupations in the Assembly and Repair of Electrical Equipment	38		T-45 Electronics
734-764	Occupations in the Fabrication of Plastics and Cooperage	93		
780-787	Occupations in Fabrication and Repair of Textiles, Leather, and Related Products	388		
801-809	Metal Fabricating Occupations	71		V-50 Welding
810-819	Welding Occupations	71		V-50 Welding
821-829	Electrical Assembly, Installing & Repairing	229		
840-845	Painting & Plastering	30		
850-859	Excavating, Paving and Grading Occupations	49		V-64 Heavy Equipment Operator

Table 5 (continued)

D.O.T. Classification	Occupational Cluster Titles	No. of Jobs	VOCATIONAL-TECHNICAL COURSE OFFERINGS	
			Public Schools	Technical Institutes
861-869	Construction Occupations	191	Bricklaying (1)	
891-899	Structural Work Occupations	79		
903-909	Motor Freight Occupations	395		T-95 Transportation Maintenance
910-919	Transportation Occupations	116		
920-929	Packaging and Material Handling Occupations	149		
950-959	Production and Distribution of Utilities	43		
	TOTAL	9,907		

From Table 5, it appears that the vocational offerings at the high school level reflect in a very limited way the vocational training needs of job positions within the power structure of Wilson County. Vocational-technical offerings at the technical institute provide training now offered in the high school programs. Combined, the offerings at the technical institutes and in the high schools provided training opportunities for 41 percent of the jobs in the manpower structure for which vocational training is appropriate.

The data presented in Table 6 list 1,780 employees in companies which provide some type of training. The combined number of jobs for which training is available from either the public schools or the technical institutes for business and industrial firms is 5,939, leaving 3,968 job positions which require vocational or technical training but for which no such training is now being provided. Detailed characteristics of the training programs offered by business and industry are provided in Tables 9 through 15, in Appendix D.

Opportunities for Occupational Education

Another definition of the place of vocational education may be described as the year level at which vocational education may be realistically available during the life span. Generally the kinds and types of vocational education provided for specific occupations is found during the 11th and 12th grades in school. Does offering vocational courses at the 11th- and 12th-grade levels provide a realistic opportunity for gaining marketable skills during high school?

Table 7 indicates that while the percentage of students completing high school in 1957 was 30 percent of the number who began in 1945, this percent had changed to 57 percent in 1966. Of the students who began in 1954-55, 15 percent had dropped out by the 8th grade. By the 12th grade 43 percent of these students had dropped out. Based on this analysis, placing vocational education at the senior high level during the years for which the data has been recorded would have made it available only to 57 percent of the students who began the first grade eleven years before.

From the data presented in Table 7, it appears that a relatively high percentage of the students beginning in the public schools do not complete twelve years of education. Thus, the dropout syndrome effectively limits the amount and kind of vocational and general education that students receive before reaching adulthood.

Additional school enrollment data for the combined Wilson, Wilson County, and Elm City School administrative units and for each administrative unit separately are shown in Tables 16 through 19, Appendix E.

Table 6. Business and Industry Training Programs

Type of Business	Number of Employees	Number of Firms	Training Director		
			Full-time	Part-time	None
Banking, finance, insurance	220	6	2	2	2
Chemical	16	1	-	-	1
Food processors	30	1	-	1	-
Hospital	412	1	1	-	-
Manufacturers	529	4	1	3	-
Printer	105	1	-	-	1
Repair-elec., bicycle, appl.	45	2	-	-	2
Retail equip.-specialized	27	1	-	1	-
Retail, household and variety	42	2	1	-	1
Tobacco	285	1	-	-	1
Transportation	7	1	-	1	-
TOTALS	1780	21	5	8	8

Table 7. School Enrollment Units 980, 981, 982

Year			Enrollment			Change in Enrollment						% Change - 12th grade enrollment over previous year
1st	8th	12th	1st	8th	12th	1-8	% Change	8-12	% Change	1-12	% Change	
54-55	61-62	65-66	1667	1422	942	245	-15	480	-33	725	-43	+ 1.8%
53-54	60-61	64-65	1700	1368	925	332	-19	443	-32	775	-46	+15.0%
52-53	59-60	63-64	1266	1165	712	101	- 8	453	-39	554	-43	+ 2.5%
51-52	58-59	62-63	1349	1182	695	167	-12	487	-41	654	-48	.8%
50-51	57-58	61-62	1359	1224	701	135	-10	523	-41	658	48	5.2%
49-50	56-57	60-61	1600	1200	740	400	-25	460	-38	960	-60	+17.0%
48-49	55-56	59-60	1490	1136	632	354	-24	504	-44	858	-57	+ .8%
47-48	54-55	58-59	1667	1121	637	546	-32	484	-44	1030	-61	+11.5%
46-47	53-54	57-58	1526	1037	581	489	-32	456	-44	935	-61	+ 5.0%
45-46	52-53	56-57	1841	1005	544	836	-45	461	-46	1297	-70	+11.0%

Source: North Carolina Department of Public Instruction, Statistical Services Center.

SUMMARY OF FINDINGS

The findings in five areas related to the objectives of the study are as follows:

Area 1. Changes in the occupational characteristics of the population from 1940 to 1960.

The total number of jobs increased by 33.3 percent. The categories of occupations showing growth rates exceeding the total growth rate comprise 64.7 percent of all job categories, while those categories exhibiting a growth rate less than the total make up 21.7 percent of the jobs. The higher growth rates are in categories for which vocational education is appropriate.

Area 2. The manpower structure of key employers.

The manpower structure as determined by a survey of key employers shows occupational categories by the number of people employed as follows:

1. farmers, farm managers, and farm laborers
2. craftsmen, foremen, and kindred workers
3. clerical, sales, and kindred workers
4. professional, technical, and kindred workers
5. laborers, except farm
6. operatives and kindred workers
7. proprietors, managers, and officials
8. service workers, except domestic

Area 3. Changes in the kinds and types of vocational offerings in the public schools and technical institutes between 1940 and 1968.

No significant changes were made in the vocational education offerings of the public schools between 1940 and 1967, with the exception of adding Introduction to Vocations. The technical institutes added seven technical programs and five trade courses.

Area 4. The relationship of available vocational training to jobs in the manpower structure requiring training.

Vocational offerings at the high school level are appropriate to 25 percent of the jobs in the manpower structure, while the courses offered by the technical institutes are appropriate to 16 percent of the jobs.

Area 5. The characteristics of training programs conducted by the business, industrial, and governmental sectors of the economy.

One thousand seven hundred eighty (1,780) persons are employed in companies which provide some type of training for their employees.

Area 6. The grade level of achievement of public school students.

The dropout syndrome effectively limits the amount and kind of vocational and general education that students receive before reaching adulthood.

CONCLUSIONS, IMPLICATIONS, RECOMMENDATIONS, AND SUMMARY

Conclusion

The conclusions drawn from the data presented and discussed are as follows:

1. Eighty-seven percent of the job positions found within the manpower survey of Wilson County comprise occupational clusters for which vocational-technical education is appropriate.

2. The vocational course offerings at the high school level are appropriate to only 25 percent of the job positions within the manpower structure, and such offerings have not changed substantially during the preceding 27 years.

3. The vocational-technical course offerings at Wilson Technical Institute are appropriate to 16 percent of the job positions within the manpower structure.

4. A relatively high percentage of the students in the public schools do not complete 12 years, thus effectively limiting the amount of vocational training and general education they receive in high school.

5. Twenty-one of the firms in Wilson County provide training for their employees. The net possible result from these training programs is only 16 percent of the job positions in the manpower structure.

6. The projected training needs of business and industry are not readily available from managers of these firms.

Implications

The implications of the data presented in this study are:

1. The vocational offerings at the high school level reflect in a very limited way the vocational training needs of job positions within the manpower structure. It is, therefore, not unreasonable to speculate that the public school system is insensitive to the changing occupational structure and concomitant training demands.

2. The vocational-technical offerings at the technical institute cover different areas than the high school programs, but these courses are not varied sufficiently to meet the training needs of the business and industry.

3. Some business and industry firms have apparently found it advantageous to provide their own training programs. The possible 16 percent of the job positions thus covered constitute a small percentage of the job positions in the manpower structure requiring special training.

4. The lack of available information for projecting employment and training needs implies a lack of planning for growth and expansion by business and industrial management that might be used by educational planners.

5. The planning of vocational-technical programs at the stage indicated by the data leads one to speculate that there has been little effective coordination between the business, industrial, and governmental sectors of the economy and the public schools and technical institutes in planning for the economic growth of the county.

Summary

This study was directed toward answering the following questions:

1. What changes have occurred in the occupational characteristics of the population during the transitional period from a predominately agrarian to a more industrialized, diversified economy?

2. To what extent are these changes manifested in the occupational education programs in the county?

3. To what extent have occupational education programs been changed and/or developed that are congruent with emerging economic and social changes in the county?

The findings and conclusions of this study are that:

1. The occupations for which vocational training is appropriate have increased at a rate exceeding the growth rate of the population.

2. No significant changes have been made in the vocational offerings at the high school level. These offerings are appropriate to approximately 25 percent of the jobs in the manpower structure. The offerings at the technical institute are appropriate to 16 percent of the job positions.

3. There appears to be little effective coordination between the business, industrial, and governmental sectors of the economy, and the public schools and technical institute in planning for programs appropriate to emerging economic and social changes in the county.

Recommendations

In view of the findings, conclusions, and implications of this study, it is recommended that steps be taken to make changes in the offerings at the public school level that will reflect a realistic acceptance of talent utilization as an outcome to be achieved. Specifically, this would be a reorientation of the curriculum toward realistic occupational goals of the participants to meet business and industrial needs. This is obviously not a venture vested solely in the public schools. The climate in the business and industrial sectors must reflect through appropriate rewards systems the values that may be accrued from such a change in educational orientation.

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APPENDICES

APPENDIX A

Table 8. The Occupational Structure of Wilson County, North Carolina, as Determined from the Key Employers Survey

DOT NUMBER	AND DESCRIPTION	CURRENT EMPLOYMENT
001.281	Architectural Occupations	3
003.081	Electrical Engineering Occupations	6
003.087	Electrical Engineering Occupations	1
003.187	Electrical Engineering Occupations	3
005.081	Civil Engineering Occupations	6
005.168	Civil Engineering Occupations	1
005.188	Civil Engineering Occupations	1
005.281	Civil Engineering Occupations	3
007.081	Mechanical Engineering Occupations	3
007.181	Mechanical Engineering Occupations	3
007.281	Mechanical Engineering Occupations	5
012.168	Industrial Engineering Occupations	2
012.188	Industrial Engineering Occupations	12
017.168	Draftsman	1
017.281	Draftsman	10
018.188	Surveyors	3
018.687	Surveyors	6
020.188	Occupations in Mathematics	2
020.281	Occupations in Mathematics	1
022.081	Occupations in Chemistry	4
029.181	Occupations in Mathematics & Physical Science	26
029.381	Occupations in Mathematics & Physical Science	12
040.081	Occupations in Agricultural Sciences	2
045.108	Occupations in Psychology	9
045.118	Occupations in Psychology	2
070.101	Physicians & Surgeons	6
070.108	Physicians & Surgeons	72
071.108	Osteopaths	1
072.108	Dentists	22
074.181	Pharmacists	16
074.387	Pharmacists	7
075.118	Registered Nurses	1
075.128	Registered Nurses	21
075.378	Registered Nurses	128
077.118	Dieticians	5
077.168	Dieticians	6
078.168	Occupations in Medical & Dental Technology	11
078.281	Occupations in Medical & Dental Technology	1
078.368	Occupations in Medical & Dental Technology	10

Table 8 (continued)

DOT NUMBER	AND DESCRIPTION	CURRENT EMPLOYMENT
078.381	Occupations in Medical & Dental Technology	26
079.108	Occupations in Medicine & Health	5
079.118	Occupations in Medicine & Health	1
079.128	Occupations in Medicine & Health	2
079.368	Occupations in Medicine & Health	5
079.378	Occupations in Medicine & Health	22
090.118	Occupations in College & University Education	6
090.168	Occupations in College & University Education	16
090.228	Occupations in College & University Education	106
091.118	Occupations in Secondary School Education	561
091.228	Occupations in Secondary School Education	52
092.228	Occupations in Primary School & Kindergarten Education	24
096.128	Home Economics & Farm Advisers	16
099.108	Occupations in Education	3
099.118	Occupations in Education	3
099.168	Occupations in Education	1
100.118	Librarians	1
100.168	Librarians	2
100.388	Librarians	3
110.108	Lawyers	85
110.118	Lawyers	4
111.108	Judges	3
119.288	Occupations in Law & Jurisprudence	1
120.108	Clergymen	98
132.018	Writers; Editors, Publications	3
132.038	Writers, Editors, Publications	5
132.088	Writers, Editors, Publications	7
132.268	Writers, Editors, Publications	4
141.081	Commercial Artists	13
142.081	Designers	1
152.028	Occupations in Music	3
153.118	Occupations in Athletics & Sports	1
159.148	Occupations in Entertainment & Recreation	14
159.168	Occupations in Entertainment & Recreation	1
160.168	Accountants & Auditors	2
160.188	Accountants & Auditors	21
160.288	Accountants & Auditors	3
161.118	Budget & Management Analysis Occupations	1
162.158	Purchasing Management Occupations	26
162.168	Purchasing Management Occupations	56
163.118	Sales & Distribution Management	12
164.068	Advertising Management Occupations	4
164.118	Advertising Management Occupations	1
165.068	Public Relations Management Occupations	1
166.118	Personnel & Training Administration Occupations	16

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
166.228	Personnel & Training Administration Occupations	1
168.168	Inspectors & Investigators, Managerial & Public Service	9
168.268	Inspectors & Investigators, Managerial & Public Service	1
168.287	Inspectors & Investigators, Managerial & Public Service	202
169.168	Occupations in Administrative Specializations	24
169.268	Occupations in Administrative Specializations	7
180.168	Agriculture, Forestry & Fishing Industry Managers	2
181.118	Mining Industry Managers & Officials	1
181.168	Mining Industry Managers & Officials	4
182.168	Construction Industry, Managers & Officials	16
182.287	Construction Industry, Managers & Officials	6
183.118	Manufacturing Industry Managers	20
183.168	Manufacturing Industry Managers	208
184.118	Industry Managers & Officials	12
184.168	Transportation, Communication & Utilities	10
185.118	Wholesale & Retail Trade Managers & Officials	1
185.168	Wholesale & Retail Trade Managers & Officials	177
186.118	Finance, Insurance, & Real Estate Managers & Officials	42
186.168	Finance, Insurance, & Real Estate Managers & Officials	1
186.288	Finance, Insurance, & Real Estate Managers & Officials	16
187.118	Service Industry Managers & Officials	9
187.138	Service Industry Managers & Officials	4
187.168	Service Industry Managers & Officials	38
188.118	Public Administration Managers & Officials	5
188.168	Public Administration Managers & Officials	6
189.118	Miscellaneous Managers	66
189.168	Service Industry Managers	22
189.268	Miscellaneous Managers	6
191.268	Agents & Appraisers	5
195.108	Occupations in Social & Welfare Work	19
195.168	Occupations in Social & Welfare Work	1
201.368	Secretaries	236
202.388	Stenographers	8
203.588	Typists	10
205.588	Personnel Clerks	1
206.388	File Clerks	6

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
207.885	Duplicating Machine Operators	2
209.388	Stenography, Typing & Filing Occupations	42
209.588	Stenography, Typing & Filing Occupations	132
210.388	Bookkeepers	194
211.368	Cashiers	12
211.468	Cashiers	54
212.138	Tellers	8
212.368	Tellers	39
213.138	Automatic Data-Processing Equipment Operators	2
213.782	Automatic Data-Processing Equipment Operators	2
214.358	Billing Machine Operators	5
215.381	Bookkeeping Machine Operators	10
215.488	Bookkeeping Machine Operators	6
216.388	Computing Machine Operators	20
217.388	Account-Recording Machine Operators	8
219.388	Computing & Account-Recording Occupations	89
219.488	Computing & Account-Recording Occupations	9
220.	Material & Production Recording Occupations	3
221.168	Production Clerks	3
221.388	Production Clerks	1
222.138	Shipping & Receiving Clerks	47
222.387	Shipping & Receiving Clerks	23
222.478	Shipping & Receiving Clerks	7
222.558	Shipping & Receiving Clerks	1
222.587	Shipping & Receiving Clerks	2
222.687	Shipping & Receiving Clerks	3
223.138	Stock Clerks & Related Occupations	5
223.387	Stock Clerks & Related Occupations	110
223.388	Stock Clerks & Related Occupations	4
223.684	Stock Clerks & Related Occupations	1
224.487	Weighers	5
230.878	Messengers, Errand Boys & Office Boys & Girls	2
231.588	Mail Clerks	5
232.368	Post Office Clerks	4
233.388	Mail Carriers	19
235.862	Telephone Operators	16
236.588	Telephone Operators	2
237.	Receptionists & Information Clerks	1
237.368	Receptionists & Information Clerks	24
239.588	Information & Message Distribution Occupations	8
241.168	Adjusters	2
242.368	Hotel Clerks	4
249.368	Miscellaneous Clerical Occupations	21

Table 8 (continued)

DOT NUMBER	AND DESCRIPTION	CURRENT EMPLOYMENT
249.388	Miscellaneous Clerical Occupations	12
250.258	Salesmen, Real Estate & Insurance	2
250.281	Salesmen, Real Estate & Insurance	3
251.258	Salesmen Securities	9
252.258	Salesmen Business & Finance Service	2
253.358	Salesmen Radio & Television Broadcasting	3
255.258	Salesmen, Transportation Services	1
257.358	Salesmen Utilities	2
261.158	Salesmen Agricultural Products	2
262.358	Salesmen, Foodstuffs, Beverages & Tobacco	108
263.358	Salesmen Textiles & Textiles Products	26
263.458	Salesmen Textile Products	51
265.358	Sales Paper & Paper Products	4
266.258	Salesmen Chemicals & Drug Preparations	2
267.358	Salesmen, Fuel & Petroleum Products	2
274.358	Salesmen, House Furnishings	16
276.158	Salesmen, Industrial, Construction, Mining & Drilling Equipment & Supplies	2
276.358	Salesmen, Industrial, Construction, Mining & Drilling Equipment & Supplies	34
277.358	Salesmen, Farm & Garden Supplies & Equipment	2
278.358	Salesmen, Household Appliances & Supplies	6
280.358	Sales, Transportation Equipment	76
281.358	Salesmen Business Machines & Supplies	10
283.358	Salesmen Jewelry & Silverware	12
285.358	Salesmen Photographic Equipment & Supplies	1
289.358	Salesmen Commodities	77
289.458	Salesmen Commodities	111
290.478	Sales Clerks	5
290.877	Sales Clerks	6
292.138	Routemen	5
292.358	Routemen	88
292.887	Routemen	9
293.358	Canvassers & Solicitors	10
297.458	Demonstrators & Models	1
298.081	Display Men & Window Trimmers	5
299.138	Merchandising Occupations Except Salesmen	19
299.381	Merchandising Occupations Except Salesmen	1
299.468	Merchandising Occupations Except Salesmen	1
299.478	Merchandising Occupations Except Salesmen	8
304.887	Housemen & Yardmen	1
310.868	Hostesses & Stewards, Food & Beverage Service	2
311.878	Waiters & Waitresses	77
313.138	Chefs & Cooks, Large Hotels & Restaurants	7

Table 8 (continued)

DOT NUMBER & DESCRIPTION		CURRENT EMPLOYMENT
313.381	Chefs & Cooks, Large Hotels & Restaurants	52
313.781	Chefs & Cooks, Large Hotels & Restaurants	2
314.381	Chefs & Cooks, Large Hotels & Restaurants	4
314.781	Chefs & Cooks, Small Hotels & Restaurants	2
314.878	Chefs & Cooks, Small Hotels & Restaurants	1
315.381	Miscellaneous Cooks Except Domestic	6
316.884	Meatcutters Except in Packing Houses	9
317.887	Miscellaneous Food & Beverage Preparation Occupations	9
318.887	Kitchen Workers	96
319.138	Food & Beverage Preparation & Service Occupations	15
319.874	Food & Beverage Preparation & Service Occupations	3
319.878	Food & Beverage Preparation & Service Occupations	18
319.884	Food & Beverage Preparation & Service Occupations	6
320.137	Boarding-House Keepers	1
321.138	Housekeepers, Hotels & Institutions	14
323.887	Maids & Housemen, Hotels & Restaurants	20
324.878	Bellmen & Related Occupations	2
330.371	Boardinghouse & Lodging-House Keepers	18
332.271	Cosmetologists	31
344.868	Ushers	7
344.878	Ushers	2
354.878	Unlicensed Midwives & Practical Nurses	44
355.878	Attendants, Hospitals, Morgues & Related Health Services	151
359.878	Miscellaneous Personal Service Occupations	2
361.884	Laundering Occupations	1
361.885	Laundering Occupations	1
361.887	Laundering Occupations	2
362.381	Dry Cleaning Occupations	1
362.782	Dry Cleaning Occupations	19
362.884	Dry Cleaning Occupations	1
362.886	Dry Cleaning Occupations	4
363.782	Pressing Occupations	33
363.884	Pressing Occupations	3
365.381	Shoe & Luggage Repairmen & Related Occupations	2

Table 8 (continued)

DOT NUMBER	DESCRIPTION	CURRENT EMPLOYMENT
369.138	Apparel & Furnishing Service Occupations	4
369.687	Apparel & Furnishing Service Occupations	9
369.877	Apparel & Furnishing Service Occupations	1
372.868	Guards & Watchmen	17
373.118	Firemen, Fire Department	3
373.884	Firemen, Fire Department	29
375.118	Policemen & Detectives, Public Service	1
375.168	Policemen & Detectives, Public Service	13
375.268	Policemen & Detectives, Public Service	18
375.588	Policemen & Detectives, Public Service	1
376.868	Policemen & Detectives Except in Public Service	6
377.868	Sheriffs & Bailiffs	8
379.168	Protective Service Occupations	1
379.387	Protective Service Occupations	1
379.878	Protective Service Occupations	1
381.137	Porters & Cleaners	1
381.887	Porters & Cleaners	231
382.884	Janitors	84
388.868	Elevator Operators	3
389.884	Building & Related Service Occupations	2
407.138	Gardening & Groundskeeping	1
407.884	Gardening & Groundskeeping	1
409.168	Farm Manager	5
409.181	Farmer, Tenant	1430
421.181	Farmer, General	752
	Farm Labor, Unpaid Family Workers	1293
422.887	Farm Irrigation Workers	26
461.885	Cotten Ginning & Compressing	6
466.887	Animal Caretaking	6
469.381	Agricultural Service	1
520.285	Mixing, Compounding, Blending, Kneading, Shaping, & Related Occupations	2
520.884	Mixing, Compounding, Blending, Kneading, Shaping & Related Occupations	3
520.885	Mixing, Compounding, Blending, Kneading, Shaping & Related Occupations	24
521.782	Separating, Crushing, Milling, Chopping, Grinding & Related Occupations	3
521.885	Separating, Crushing, Milling, Chopping, Grinding & Related Occupations	305
521.887	Separating, Crushing, Milling, Chopping, Grinding & Related Occupations	132
522.885	Culturing, Melting, Fermenting, Distilling, Saturating, Pickling, Aging & Related Occupations	3

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
523.132	Heating, Rendering, Melting, Drying, Cooling, Freezing & Related Occupations	20
523.885	Heating, Rendering, Melting, Drying, Cooling, Freezing & Related Occupations	3
524.381	Coating, Icing, Decorating & Related Occupations	4
525.381	Slaughtering, Breaking, Curing & Related Occupations	3
525.884	Slaughtering, Breaking, Curing & Related Occupations	39
525.886	Slaughtering, Breaking, Curing & Related Occupations	1
525.887	Slaughtering, Breaking, Curing & Related Occupations	23
526.	Cooking & Baking Occupations	8
526.130	Cooking & Baking Occupations	3
526.782	Cooking & Baking Occupations	8
529.132	Occupations in Processing of Food, Tobacco & Related Products	8
529.138	Occupations in Processing of Food, Tobacco & Related Products	14
529.687	Occupations in Processing of Food, Tobacco & Related Products	15
529.782	Occupations in Processing of Food, Tobacco & Related Products	86
529.886	Occupations in Processing of Food, Tobacco & Related Products	1136
542.885	Distilling, Subliming & Carbonizing Occupations	1
550.885	Mixing and Blending Occupations	16
556.130	Casting & Molding Occupations	6
559.885	Occupations in Processing of Chemicals, Plastics, Synthetics, Rubber, Paint & Related Products	11
570.885	Crushing, Grinding & Mixing Occupations	20
575.131	Forming Occupations	1
578.381	Molders, Coremakers & Related Occupations	2
579.884	Occupations in Processing of Stone, Clay, Glass and Related Products	5
579.886	Occupations in Processing of Stone, Clay, Glass and Related Products	17
589.885	Occupations in Processing of Leather, Textiles & Related Products	1
599.887	Miscellaneous Processing Occupations	2
600.280	Machinists & Related Occupations	43
601.280	Toolmakers & Related Occupations	4

Table 8 (continued)

DOT NUMBER	AND DESCRIPTION	CURRENT EMPLOYMENT
609.684	Metal Machining Occupations	1
615.782	Punching & Shearing Occupations	5
616.782	Fabricating Machine Occupations	20
617.380	Forming Occupations	4
617.885	Forming Occupations	1
619.281	Miscellaneous Metal Working Occupations	3
619.885	Miscellaneous Metal Working Occupations	3
620.131	Motorized Vehicle & Engineering Equipment Mechanics	7
620.281	Motorized Vehicle & Engineering Equipment Mechanics	196
620.381	Service Station Mechanics	
620.884	Motorized Vehicle & Engineering Equipment Mechanics	5
625.281	Engine, Power Transmission & Related Occupations	16
629.281	Special Industry Machinery Mechanics	7
630.884	General Industry Mechanics & Repairmen	2
633.131	Business & Commercial Machine Repairmen	1
633.281	Business & Commercial Machine Repairmen	3
637.281	Utilities Services Mechanics & Repairmen	29
637.887	Utilities Services Mechanics & Repairmen	1
638.131	Miscellaneous Occupations in Machine Installation & Repair	2
643.885	Corrugating Occupations	1
649.	Paperworking Occupations	14
649.130	Paperworking Occupations	1
650.582	Typesetters & Composers	11
651.782	Printing Press Occupations	8
652.782	Printing Machine Occupations	7
659.130	Printing Occupations	2
660.280	Cabinetmakers	37
663.782	Shearing and Shaving Occupations	1
667.782	Chipping, Cutting, Sawing & Related Occupations	58
667.886	Sawing Occupations	1
669.137	Wood Machining Occupations	22
669.587	Wood Machining Occupations	1
669.782	Wood Machining Occupations	2
669.887	Wood Machining Occupations	2
673.782	Abrading Occupations	2
677.782	Chipping, Cutting, Sawing & Related Occupations	1
691.782	Occupations in Fabrication of Insulated Wire & Cable	74
691.885	Occupations in Fabrication of Insulated Wire & Cable	45

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
692.782	Occupations in Fabrication of Insulated Wire & Cable	3
692.886	Occupations in Fabrication of Insulated Wire & Cable	1
699.138	Miscellaneous Machine Trade Occupations	9
704.381	Engravers, Etchers & Related Occupations	1
706.884	Metal Unit Assemblers & Adjusters	18
706.887	Metal Unit Assemblers & Adjusters	8
709.884	Occupations in Fabrication, Assembly of Metal Products & Repair	10
710.281	Occupations in Fabrication & Repair of Instruments for Measuring, Controlling & Indicating Physical Characteristics	8
711.781	Occupations in Fabrication & Repair of Optical Instruments & Lenses	2
711.884	Occupations in Fabrication & Repair of Optical Instruments	1
712.281	Occupations in Fabrication & Repair of Surgical, Medical & Dental Instruments & Supplies	1
712.781	Occupations in Fabrication & Repair of Surgical, Medical & Dental Instruments & Supplies	1
712.884	Occupations in Fabrication & Repair of Surgical, Medical, & Dental Instruments & Supplies	3
715.281	Occupations in Fabrication & Repair of Watches, Clocks & Parts	4
723.381	Occupations in Winding & Assembling Coils, Magnets, Armatures & Related Products	1
723.884	Occupations in Winding & Assembling Coils, Magnets, Armatures & Related Products	7
726.384	Occupations in Assembly & Repair of Electronic Components & Accessories	12
728.884	Occupations in Fabrication of Electrical Wire & Cable	18
733.341	Occupations in Fabrication & Repair of Pens, Pencils & Office & Artists Materials	1
739.687	Occupations in Fabrication & Repair of Products Made From Assorted Materials	1
739.884	Occupations in Fabrication & Repair of Products Made From Assorted Materials	5
741.884	Painters, Spray	3
741.887	Painters, Spray	2
754.884	Occupations in Fabrication & Repair of Miscellaneous Plastic Products	73
764.884	Cooperage Occupations	20

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
780.884	Occupations in Upholstering and in Fabrication & Repair	1
781.687	Laying out, Marking, Cutting & Punching Occupations	10
781.884	Laying out, Marking, Cutting & Punching Occupations	27
781.887	Laying out, Marking, Cutting & Punching Occupations	12
782.884	Hand Sewers, Menders, Embroiders, Knitters & Related Occupations	2
784.781	Occupations in Fabrications & Repair of Hats, Caps, Gloves & Related Products	2
785.281	Tailors & Dressmakers	40
785.381	Tailors & Dressmakers	8
786.782	Sewing Machine Operators, Garment	37
787.381	Sewing Machine Operators, Nongarment	2
787.782	Sewing Machine Operators, Nongarment	97
801.781	Fitting, Bolting & Screwing & Related Occupations	4
804.281	Tinsmiths, Coppersmiths, & Sheet Metal Workers	9
804.886	Tinsmiths, Coppersmiths, & Sheet Metal Workers	64
806.138	Transportation, Equipment Assemblers & Related Occupations	79
806.884	Transportation, Equipment Assemblers & Related Occupations	5
807.281	Bodymen, Transportation Equipment	16
807.381	Bodymen, Transportation Equipment	197
809.130	Miscellaneous Occupations in Metal Fabricating	12
809.281	Miscellaneous Occupations in Metal Fabricating	2
810.782	Arc Welders	5
810.884	Arc Welders	9
812.884	Combination Arc Welders & Gas Welders	51
819.886	Welders, Flame Cutters & Related Occupations	2
819.887	Welders, Flame Cutters & Related Occupations	4
821.381	Occupations in Assembly Installation & Repair of Transmission & Distribution Lines & Circuits	10
821.885	Occupations in Assembly, Installation & Repair of Transmission & Distribution Lines & Circuits	7

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
822.28	Occupations in Assembly, Installation & Repairs of Wire Communication Detection & Signaling Equipment	65
824.281	Occupations in Assembly, Installation & Repair of Lighting Equipment & Building Wiring	76
827.281	Occupations in Assembly Installation & Repair of Large Household Appliances & Similar Commercial & Industrial Equipment	12
827.831*	Occupations in Assembly, Installation & Repair of Large Household Appliances & Similar Commercial & Industrial Equipment	7
829.131	Occupations in Installation & Repair of Electrical Products	1
829.281	Occupations in Installation & Repair of Electrical Products	5
829.684	Occupations in Installation & Repair of Electrical Products	8
829.887	Occupations in Installation & Repair of Electrical Products	38
840.281	Construction & Maintenance Painters & Related Occupations	5
840.781	Construction & Maintenance Painters & Related Occupations	17
841.781	Construction & Maintenance Painters & Related Occupations	1
844.884	Cement & Concrete Finishers & Related Occupations	6
845.781	Transportation, Equipment Painters & Related Occupations	6
850.883	Excavating & Grading & Related Occupations	11
853.133	Asphalt Paving Occupations	4
853.883	Asphalt Paving Occupations	14
853.887	Asphalt Paving Occupations	12
859.883	Excavating, Grading, Paving & Related Occupations	8
860.131	Carpenters & Related Occupations	1
860.281	Carpenters & Related Occupations	6
860.381	Carpenters & Related Occupations	18
860.887	Carpenters & Related Occupations	13
861.381	Brick & Stone Masons & Tile Setters	12
862.131	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	3

Table 8 (continued)

DOT NUMBER AND DESCRIPTION		CURRENT EMPLOYMENT
862.281	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	8
862.381	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	17
862.638	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	2
862.884	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	11
862.887	Plumbers, Gas Fitters, Steam Fitters & Related Occupations	6
863.884	Asbestos & Insulation Workers	18
864.781	Floor Laying & Related Occupations	4
864.887	Floor Laying & Related Occupations	2
865.884	Glaziers & Related Occupations	2
866.381	Roofers & Related Occupations	9
869.137	Miscellaneous Construction Occupations	2
869.281	Miscellaneous Construction Occupations	4
869.887	Miscellaneous Construction Occupations	53
891.138	Occupations in Structural Maintenance	6
899.281	Miscellaneous Structural Work Occupations	1
899.381	Miscellaneous Structural Work Occupations	66
899.887	Miscellaneous Structural Work Occupations	6
903.883	Truck Drivers, Inflammables	1
904.883	Trailer Truck Drivers	19
905.883	Truck Drivers, Heavy	206
905.887	Motor Freight Occupations	1
906.883	Truck Drivers, Light	93
909.137	Motor Freight Occupations	9
909.883	Motor Freight Occupations	12
909.887	Motor Freight Occupations	9
910.138	Railroad Transportation Occupations	1
910.368	Railroad Transportation Occupations	1
910.388	Railroad Transportation Occupations	1
913.168	Passenger Transportation Occupations	4
913.463	Passenger Transportation Occupations	16
913.883	Passenger Transportation Occupations	1
915.884	Attendants & Servicemen, Parking Lots & Service Facilities	21
915.867	Attendants & Servicemen, Parking Lots & Service Facilities	47
915.887	Attendants & Servicemen, Parking Lots & Service Facilities	4
919.168	Miscellaneous Transportation Occupations	10
919.883	Miscellaneous Transportation Occupations	5
919.887	Miscellaneous Transportation Occupations	5

Table 8 (continued)

DOT NUMBER	AND DESCRIPTION	CURRENT EMPLOYMENT
920.885	Packaging Occupations	41
920.887	Packaging Occupations	52
921.883	Hoisting & Conveying Occupations	8
922.883	Occupations in Moving & Storing Materials	14
922.887	Occupations in Moving & Storing Materials	27
929.133	Packaging & Materials Handling Occupations	2
929.883	Packaging & Materials Handling Occupations	1
929.877	Packaging & Materials Handling Occupations	2
929.887	Packaging & Materials Handling Occupations	2
930.782	Boring, Drilling, Cutting & Related Occupations	1
932.883	Loading & Conveying Occupations	1
932.887	Loading & Conveying Occupations	1
934.884	Screening & Related Occupations	1
934.885	Screening & Related Occupations	3
939.168	Occupations in Extraction of Minerals	1
940.884	Timber Cutting & Related Occupations	28
950.782	Stationery Engineers	3
951.885	Firemen & Related Occupations	7
954.782	Occupations in Filtration, Purification & Distribution of Water	10
955.782	Occupations in Disposal of Refuse & Sewage	1
955.885	Occupations in Disposal of Refuse & Sewage	12
955.887	Occupations in Disposal of Refuse & Sewage	6
959.887	Occupations in Production & Distribution of Utilities	4
960.382	Motion Picture Projectionists	7
970.081	Art Work Occupations, Brush, Spray or Pen	3
973.381	Hand Compositors, Typesetters & Related Occupations	1

APPENDIX B

VOCATIONAL COURSES OFFERED IN THE SECONDARY SCHOOLS

Course No. 701: Introduction to Agricultural Occupations

This course has three phases: (1) orientation of the students to the vocational agriculture education program in the high school; (2) development of the students' agricultural leadership skills; and (3) exploration and appraisal by students of their education and vocational interests and aptitudes in relation to the complex of occupations available in agriculture.

In the first phase, students are introduced to the following: (1) purposes of the four-year program; (2) the six major learning areas to be studied; (3) the youth organization (FFA or NFA); and (4) the teaching staff, the teaching facilities, and requirements for the successful completion of the program of study.

In the second phase, students are introduced to and participate in the local youth organization (FFA or NFA) through individual, committee, and chapter activities. Specific attention is given to developing understandings, appreciations, and skills by active participation in group meetings according to accepted rules of parliamentary procedure and by writing and public speaking.

In the third phase, students are directed in the following: (1) exploration of their educational and vocational interests and aptitudes; (2) exploration of the occupations found in agricultural production, appraisal of the information collected by the student about himself and the occupations available in agriculture.

Course No. 702: Agricultural Science and Mechanics

This course enables students to develop understanding and appreciation of scientific principles and concepts which have application in agriculture and to develop mental and performance skills related to the mechanical aspects of agricultural occupations. It further provides a basis for more specialized training in agriculture.

Instruction is provided in the areas of animal science, plant science, soil science, agricultural business, and agricultural mechanics. These teaching-learning areas are undergirded by and supplemented with vocational guidance and the development of leadership and citizenship abilities.

Emphasis is given to the practice of "learning by doing"--students apply the principles and concepts learned in systematically planned learning experiences both during and after school hours. These experiences are obtained at school, at the student's home, or through businesses in the community which involve occupations in agriculture.

Course No. 703: Agricultural Production[1]

This course enables students to develop understanding of the basic principles and concepts in the production of agricultural products. Manipulative skills are developed to the extent the student will be able to apply the principles and concepts to practical situations. Integrated units of instruction are: (1) crop production; (2) livestock production; (3) soil management; and (4) agricultural mechanics.

The content of the course is organized and integrated with vocational guidance and leadership development. Further understandings and managerial skills are developed through planned work experiences on the student's home farm, through farm placement, or in an agricultural business which involves activities related to the course of instruction.

Course No. 704: Agricultural Management[2]

This course enables students to develop basic understandings and managerial skills necessary to make wise decisions relative to management problems in modern agriculture. It consists of units in the areas of: (1) agricultural economics; (2) marketing of farm products; (3) farm policies and loans; (4) purchasing and managing farm machinery and equipment; (5) maintenance of farm buildings and equipment; (6) efficient use and management of resources; and (7) the process of solving agricultural problems.

The content of the course is organized and integrated with vocational guidance and leadership development. Further understandings and managerial skills are developed through planned work experiences on the student's home farm, through farm placement, or in an agricultural business which involves activities related to the course of instruction.

Course No. 711.1: Home Economics 1

Home Economics 1 is a basic introductory course for homemaking, with emphasis on the individual and the development of attitudes, values and skills commensurate with the student's age, interest and ability.

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[1]This course is developed primarily for schools with single teacher departments and where there is a need for instruction in the area of agricultural production.

[2]This course is designed primarily for small schools with single teacher departments and where there is a need for a management course which is heavily farm oriented.

The course is directed toward improving family living by the study of the following: caring for young children in the home and baby sitting; selecting and caring for one's clothing; simple construction processes; personal grooming; improving personal traits for better family living; planning, preparing and serving simple, nutritious meals, using foods which can be served interchangeably for breakfast, lunch or supper; caring for one's own room, with emphasis on attractiveness, orderliness, safety, sanitation and management; and managing personal funds.

Course No. 712: Home Economics 2

This course provides greater depth in the experiences of homemaking by helping pupils understand the following: processes of growth and maturation of children and the role of adults in helping children to develop; textiles and weaves as related to wearability, laundering and functional uses; clothing construction, using a variety of equipment, patterns and fabrics; group interaction in the family, with emphasis on individual members' needs, interests and ambitions; development of management practices to help maintain good group relations within the home; the uses of a broad variety of household equipment and accessories in preparation of meals; the study of daily dietary needs and meal patterns required for children, adolescents, adults, expectant mothers and aging members; advanced principals of food cookery, involving the use of a variety of meats, fruits, and vegetables; the needs of family housing based on social, economic and cultural characteristics and interests, with emphasis on planning housing location, construction or rental, and equipment and furnishings, for satisfying the total family needs.

A brief unit on vocational opportunities which require home economic skills and knowledge is included in the course.

Course No. 713: Home Economics 3[3]

This course includes individualized experiences which emphasize the following: the influence of heredity and health in infant development; the shared emotional, social, and financial aspects of parenthood; management of the family budget in selecting, renovating and constructing clothing; creative experiences with new fabrics, equipment and wardrobe planning; management of the production, consumption, and investment of the family's human and material resources, including money, time, energy, talents, and community services; the influence of religion, education, health, heredity and social growth in maintaining satisfying home life; problems with foods for special occasions, adequate meals for differing income levels, and current research in nutrition, food equipment, food preparation and management; prevention of diseases and recognition of symptoms of illness; home

[3]This course is not recommended for the college-bound student except where special interest is indicated and the credit is not required for graduation.

care of the sick; the legal aspects of home ownership, cost, house planning, and selection of appliances and furnishings in meeting the family's housing needs.

A unit in vocational occupations requiring home economic skills and knowledge is included in the course based upon surveys of the local community.

Course No. 741: Industrial Cooperative Training 1

This junior level course introduces students to the world of work and offers occupational training through work experience and related classroom instruction. The curriculum is divided into two areas:

General related study units (14-18 weeks per year)

Orientation
Employment
How to Study
Industrial safety, first-aid, health and hygiene
Economics
Character development, personality, and human relations

Technical related study materials (18-22 weeks per year)

This area of study involves information directly related to the occupation in which the student-learner is training on the job. The coordinator prepares an individual training plan and selects appropriate texts based on an analysis of the student-learners' occupation. The training plan represents the directly related technical information that the student-learner should have to enable him to perform manipulative skills efficiently and effectively, and to understand basic theories and technologies related to this work.

The coordinator visits each student-learner on his job once a month, more often if necessary; and maintains a record of each supervisory visit. The student-learner is required to maintain an average of 15 to 25 hours per week of training on the job, the greater portion of which must be during the normal day school hours.

Course No. 742: Industrial Cooperative Training 2

This course is a continuation of Industrial Cooperative Training 1 offering more advanced related instruction and introduces to the student more complex phases in his occupational training area through work experience. Industrial Cooperative Training 2 is also divided into two related study areas:

General related study units (14-18 weeks per year)

Duties and responsibilities of the worker
Agencies affecting employment
Communication skills
Government agencies
Applied mathematics and science

Technical related study materials (18-22 weeks per year)

This area of study involves information directly related to the occupation in which the student-learner is training on the job. The coordinator prepares an individual training plan and selects appropriate texts based on an analysis of the student-learner's occupation. The training plan represents the directly related technical information that the student-learner should have to enable him to perform manipulative skills efficiently and effectively, and to understand basic theories and technologies related to this work.

The coordinator visits each student-learner on his job once a month, more often if necessary; and maintains a record of each supervisory visit. The student-learner is required to maintain an average of 15 to 25 hours per week of training on the job, the greater portion of which must be during the normal day school hours.

Course No. 761.1: Bricklaying 1

This junior level course develops understanding of theory and basic skills needed to construct walks, partitions, fireplaces, chimneys and other structures of brick and/or other masonry materials such as concrete, cinder and gypsum block, and precast panels of brick, cement, tile stone or marble. It involves instruction and practice in the use of masonry hand tools.

Making mortar
Care and use of tools
Bonds and joints
Building wall panels of various bonds and thicknesses
Building corner patterns of various bonds and thicknesses
Building wall panels with brick and other bonding materials
Building wall panels with various openings using lintels
Building wall panels with various openings using arches
Building offsets, insets and extended wall panels
Building cavity wall panels
Building supporting structures
Building flues, chimneys and fireplaces
Building ornamental wall panels
Building outdoor structures

Course No. 761.2: Bricklaying 2

This is the second and final year of the course. Additional theory is taught and further skill development is achieved through the following units.

Laying out a foundation
Building up leads
Laying to the line
Building solid walls
Building veneer walls
Underpinning
Pointing up and jointing
Cleaning brick and other masonry materials
Reading plans
Estimating brick and other masonry materials
Scaffolding
Safety
Painting brick and other masonry materials
Waterproofing masonry materials

Course No. 799: Introduction to Vocations

This is an introductory course covering the many vocational aspects of our society and embodying the economic principles and sociological factors that underlie the student's everyday activities. The following vocational fields are actively explored and discussed: manual and manipulative occupations; clerical, sales, and service occupations; and professional, technical and managerial occupations. Emphasis is also given to self evaluation and planning ahead. Underlying this total course is guidance, which plays an important part in the student's activities in the various occupations.

APPENDIX C

CURRICULUM DESCRIPTIONS
WILSON TECHNICAL INSTITUTE

T03 Agricultural Equipment

The Agricultural Equipment curriculum is designed to help the student develop the ability to select, demonstrate, install, and maintain internal combustion engines and agricultural equipment. He learns to utilize technical bulletins and manuals relative to the agricultural equipment industry, and he is taught to communicate effectively and to deal with individual human behavior problems peculiar to the agricultural equipment industry. The student gains an understanding of the principles of general business organization, management, and procedures relating to the agricultural equipment industry and selected areas of agricultural economics applicable to the industry. He also gains the ability to utilize the knowledge and skills acquired in solving problems of the agricultural equipment industry.

Employment is found in areas of manufacturing and distributing equipment. Local distributors employ technicians for sales, service, and general maintenance of farm equipment.

T16 Accounting

The Accounting curriculum is designed to teach students the necessary accounting theories and skills for entry into the accounting profession. Objectives of this curriculum are to develop an understanding of the principles of organization and management in business operations, the fundamentals of accounting and analysis of financial statements, and effective communications for business.

The graduate of the Accounting curriculum may qualify for various jobs in business and industry leading to any of the following accounting positions: accounting clerk, payroll clerk, accounting machine operator, auditor, and cost accountant. The duties and responsibilities of an accountant may include: record transactions, render periodic reports, maintain cost records, make special reports, complete tax returns, audit the books, and advise management in areas of financial affairs.

T30 Secretarial - Executive

The purpose of the Executive Secretary curriculum is to provide students with training in the accepted procedures required by the

business world. It is designed to give students the necessary secretarial training in typing, dictation, transcription, and terminology for employment. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

The graduate may be employed as a stenographer or a secretary. Stenographers are primarily responsible for taking dictation and transcribing letters, memoranda, and reports. The secretary, in addition to taking dictation and transcribing, is given more responsibility in connection with meeting office callers, screening telephone calls, and being an assistant to an executive. She may enter a secretarial position in a variety of offices in businesses such as insurance companies, banks, marketing institutions, and financial firms.

T36 Air Conditioning and Refrigeration

The Air Conditioning and Refrigeration curriculum is designed to prepare the student to assist in planning, installing, operating and maintaining air conditioning equipment. The required technical information is presented and related skills are developed to enable the graduate to function efficiently when working with engineers, systems designers, skilled craftsmen, salesmen, and others in the field.

The air conditioning and refrigeration technician may be employed in areas of sales, installation, maintenance, productin drafting, systems design, or as a research engineering assistant. He is involved with equipment for regulating temperature and humidity. He works with control systems, ducts and piping for distribution of air, water, steam and refrigerants.

T43 Drafting and Design - Mechanical

The Mechanical Drafting and Design curriculum has been designed for training persons in the performance of basic duties as a mechanical draftsman. Emphasis is placed upon ability to think and plan, as well as upon drafting procedures and techniques used by mechanical draftsmen.

Mechanical drafting and design technicians perform many aspects of drafting in a specialized field, such as the developing of the drawing design factors and availability of material and equipment, production methods and facilities are frequent assignments. They assist in the design of units and controls from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers' original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work of other design, production, tooling, material, and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings. These technicians are employed in many types of manufacturing, fabrication, research development, and service industries. Substantial numbers also are employed in communications;

transportation; public utilities; consulting engineering firms; and federal, state, and local governments.

T45 Electronics

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as supported help to an engineer, or as a liaison between the engineer and the skills craftsman.

The electronics technician will start in one or more of the following areas: research, design, development, production, maintenance, or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician, supervisor, or equipment specialist.

T95 Transportation Maintenance

The Transportation Maintenance curriculum is designed to train students as technicians in the automotive and trucking field. The curriculum provides for principles of design, operation, laboratory tests on materials and equipment, and preventative maintenance. The student develops the ability to execute or supervise diagnostic tests and repairs.

These technicians serve the industry as equipment salesmen, laboratory testers, technical service representatives, automotive and truck service specialists, diagnosticians, diesel technicians, and service managers.

V03 Auto Mechanics

The Auto Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair, and adjust automotive vehicles. Manual skills are developed in practical shop work. Thorough understanding of the operating principles involved in the modern automobile comes in class assignments, discussions, and shop practice.

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas, they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts or restore the vehicle or machine to proper operating conditions and use shop manuals and other technical publications as references for technical data.

V32 Machinist

The Machinist curriculum is designed to give individuals the opportunity to acquire basic skills and the related technical information necessary to gain employment in a machine shop. The machinist is a skilled worker who shapes metal by using machine tools and hand tools.

This skilled worker must be able to set-up and operate the machine tools found in a modern shop. He makes standard calculations relating to dimensions of work, tooling, feeds, and speeds of machining. He must know the composition of metals so that he can anneal and harden tools and metal parts.

V38 Practical Nursing

The Practical Nursing curriculum is designed to make available to qualified persons the opportunity to prepare for participation in care of patients of all ages, in various states of dependency, and with a variety of illness conditions. Throughout the program the student is expected to grow continuously in acquisition of knowledge and understandings related to nursing, the biological sciences, the social sciences, and in skills related to nursing practice, communications, interpersonal relations, and use of good judgment.

The licensed practical nurse is prepared to function in a variety of situations: hospitals of all types, nursing homes, clinics, doctors' and dentists' offices, and in some public health facilities. In all situations the LPN functions under supervision of a registered nurse and/or licensed physician. This supervision may be minimal in situations where the patient's condition is stable and not complex; or it may consist of continuous direction in situations requiring the knolwedge and skills of the registered nurse or physician. In the latter situation, the LPN may function in an assisting role in order to avoid assuming responsibility beyond that for which the program can prepare the individual.

V50 Welding

The Welding curriculum is designed to give students a sound understanding of the principles, methods, techniques, and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure, to form a permanent bond between intersecting sections.

Welding offers employment in practically any industry: shipbuilding, automotives, aircraft, guided missiles, heavy equipment, railroads, construction, pipe fitting, production shop, job shop, and many others.

V64 Heavy Equipment Operator

Students interested in the operational functions of heavy earth-moving equipment are trained in the Heavy Equipment Operator curriculum. The student may choose two machines for his major and minor specialities to learn the operational functions. The class work consists of related subjects and operational principles.

Employment is found with contractors and state highway departments that use heavy moving equipment. The following is a list of typical earth-moving equipment: pull shovel or back hoe, crawler type tractors, motor grader, scraper, shovel, drag line, clamshell, and crane.

APPENDIX D

DETAILED CHARACTERISTICS OF THE TRAINING PROGRAMS OFFERED BY BUSINESS AND INDUSTRY

Table 9. Types of Training Programs, Business and Industry

Need Areas Being Satisfied By Present Program	Number Of Firms	Number of Employees
Orientation of New Employees	13	1376
Upgrading Old Employees	9	1242
Retraining for New or Different Jobs	6	980
Preparing Employees for Retirement	1	25
Other	2	192
TOTALS		3815

Table 10. Educational Areas Included in Business and Industry Training Programs

Areas of Instruction in Present Program	Number Of Firms	Number of Employees
Management and Supervision	9	1218
Technical and Vocational	7	878
General Education	4	470
Human Relations	3	345
Other	2	58
TOTALS		2969

Table 11. Projected Business and Industry Training Needs

Future Training Needs	Number Of Firms	Number of Employees
Orientation of New Employees	2	23
Upgrading Old Employees	2	406
Retraining for New or Different Jobs	2	150
Preparing Employees for Retirement	1	412
Other	5	409
TOTALS		1400

Table 12. Clientele for Specific Training Programs, Business and Industry

Clientele of Present Program	Number of Firms
Senior Executives	4
Junior Executives	6
Professionals	3
Sales Staff	8
Supervisors	9
Foreman	7
Operatives	7
Sanitary Maintenances	2

Table 13. Source of Instructors for Business and Industry Training Programs

Source of Instructors	Number of Firms
Company	13
Community College	2
State Department of Education	0
Colleges & Universities	2
Other	3

Table 14. Training Program Organization by Business and Industry

Method of Format Used In Program	Number of Firms
Classes	12
Short Courses	6
Institutes	0
Workshops	7
Conferences	5
Conventions	4
Seminars	4
On-the-Job	10
Discretion of Planner	9

Table 15. Encouragement for Acquiring Training by Business and Industry

Company Encouragement To Employees	Number of Firms
On-the-Job Time for Training	11
Cost of Tuition or Fees	6
Cost of Books & Supplies	5
Other	6

APPENDIX E

SCHOOL ENROLLMENT DATA

Table 16. School Enrollment Data, School Administrative Units 980, 981, 982

Grade	54-55 1	55-56 2	56-57 3	57-58 4	58-59 5	59-60 6	60-61 7	61-62 8	62-63 9	63-64 10	64-65 11	65-66 12
1	1667	1621	1666	1596	1570	1548	1479	1422	1364	1224	1081	942
2	1651	1674	1601	1551	1505	1357	1368	1321	1170	1032	925	
3	1382	1302	1264	1236	1190	1165	1112	1038	793	712		
4	1293	1286	1266	1221	1182	1120	948	809	695			
5	1352	1316	1281	1224	1149	952	815	701				
6	1309	1306	1200	1155	1024	856	740					
7	1218	1126	1043	928	782	632						
8	1121	1064	887	742	637							
9	1006	780	667	571								
10	1390	637	544									
11	705	605										
12	536											

Source: North Carolina Department of Public Instruction, Statistical Service Center.

Table 17. School Enrollment Data, Unit 980

Grade	54-55 1	55-56 2	56-57 3	57-58 4	58-59 5	59-60 6	60-61 7	61-62 8	62-63 9	63-64 10	64-65 11	65-66 12
1	643	627	633	607	587	597	553	495	433	403	367	325
2	682	656	649	640	613	584	531	486	427	364	343	
3	571	558	526	512	484	460	414	357	287	246		
4	544	531	506	479	461	411	344	298	237			
5	594	547	524	502	431	349	284	254				
6	597	566	515	448	405	334	293					
7	530	477	412	360	302	254						
8	512	446	372	311	274							
9	405	290	251	219								
10	312	254	216									
11	282	253										
12	237											

Source: North Carolina Department of Public Instruction, Statistical Service Center.

Table 18. School Enrollment Data, Unit 981

Grade	54-55 1	55-56 2	56-57 3	57-58 4	58-59 5	59-60 6	60-61 7	61-62 8	62-63 9	63-64 10	64-65 11	65-66 12
1	243	235	233	225	199	214	193	178	185	158	131	117
2	242	271	244	223	208	184	164	163	147	126	113	
3	207	192	191	168	160	156	137	122	102	103		
4	174	179	163	154	139	137	115	99	92			
5	177	176	149	140	118	110	89	80				
6	160	147	133	120	113	116	102					
7	129	124	120	109	99	81						
8	130	131	124	101	92							
9	133	124	107	89								
10	119	95	84									
11	92	85										
12	64											

Source: North Carolina Department of Public Instruction, Statistical Service Center.

Table 19. School Enrollment Data, Unit 982

Grade	54-55 1	55-56 2	56-57 3	57-58 4	58-59 5	59-60 6	60-61 7	61-62 8	62-63 9	63-64 10	64-65 11	65-66 12
1	781	759	800	770	784	737	753	749	746	661	589	490
2	727	747	708	688	684	689	673	692	596	542	469	
3	604	552	547	556	552	549	561	459	410	363		
4	575	576	597	588	582	573	479	412	366			
5	581	593	608	582	600	493	442	367				
6	552	593	552	587	506	406	345					
7	559	535	511	459	381	337						
8	479	487	391	330	271							
9	468	366	309	263								
10	359	298	244									
11	331	267										
12	235											

Source: North Carolina Department of Public Instruction, Statistical Service Center.

APPENDIX F

INTERVIEW SCHEDULES

Form 1126

Interviewer's Name _____

Interview Number _____

Employer Name _____

Address _____

Type of Business or Industry _____

Information on this form is confidential and will not be revealed to any unauthorized person nor published in such a manner that data relating to individual companies can be identified.

A. Number of employees on all payrolls: _____

B. Please list in the space below (2) all occupational categories presently in your firm, (3) the number of people in each occupation and (4) the number of additional people you expect to hire within the next 5 years.

DOT CODE (1)	OCCUPATION (2)	CURRENT EMPLOYMENT (3)	Additional people you expect to hire in next 5 years (4)
	NEW POSITIONS TO BE CREATED		

Interviewer's Name _____ Form 1127

A Survey of Training Programs in Key Business and Industries in Wilson County, North Carolina

Coding Columns

Instructions:

(1) Each question may be answered by placing a check mark (✓) in the appropriate blank ( ). More than one blank may be checked in some cases.

(2) In answering each question, exclude from conclusions any locations, branches, or operations the company may have in other states or areas.

Definition: TRAINING PROGRAM - Any type of organized instructions conducted, supervised and/or sponsored by your company.

1-3 Respondent Number ____

4-7 Name of Firm _____

Total Number of Employees _____

8-9 Type of Business or Industry: Circle No. of applicable classification.

1. Advertising and Public Relations
2. Attorneys
3. Automotive
4. Banking, Finance, and Insurance
5. Box Company
6. Chemical
7. Communication
8. Contractors and Engineers
9. Educational
10. Entertainment
11. Florist
12. Food Processors
13. Funeral Home
14. Grain and Ag. Products
15. Hospital
16. Hotel and Motel
17. Laundry and Dry Cleaning
18. Manufacturers
19. Personal Services - Barber, Beauty
20. Photographer
21. Physician and Related (Opticians and Vets)
22. Printer
23. Real Estate
24. Repair - Electric, Bicycle and Appliances
25. Retail Building Supply and Paint
26. Retail Clothing
27. Retail Drug
28. Retail Equipment - Specialized
29. Retail Food
30. Retail Fuel
31. Retail Household and Variety Includes: Dept. Stores, Dime Stores Furniture and Appliances
32. Retail Office Equipment
33. Service Stations
34. Sheet Metal
35. Sign Companies
36. Tobacco
37. Transportation
38. Utility
39. Wholesalers
40. Other _____

Coding Columns

16 1. Do you have a training program for your employees? Yes 1 ( )
No 2 ( )

17 2. Do you have a training director? Yes 1 ( ) No 2 ( )

18 3. If yes, (2) how is your training director employed?
Fulltime 1 ( ) Part time 2 ( )

19 4. What areas of need are presently being satisfied by your program?

(1) Orientation of new employees ( )
(2) Upgrading old employees ( )
(3) Retraining employees for new or different jobs ( )
(4) Preparing employees for retirement ( )
(5) Other ( ) Please specify_____
(6) Have no training program ( )

20 5. What areas of instruction are involved in the satisfaction of these needs?

(1) Management and supervision ( )
(2) Technical and vocational ( )
(3) Human relations ( )
(4) General education ( )
(5) Other ( ) Please specify_____
(6) Have no training program ( )

21 6. For whom are the programs planned?

(1) Senior executives ( )
(Members of the board of directors, president, executive vice-president, etc.)
(2) Junior executives ( )
(Divisional vice-presidents, plant managers, ships' captains, store managers)
(3) Professionals ( )
(Engineers, research staff)
(4) Sales staff ( )
(Salesmen, sales engineers, buyers for nonmanufacturing firms)
(5) Supervisors ( )
(Department or section supervisors)
(6) Foremen ( )
(Work group, crew, or construction group)
(7) Operative ( )
(Machine operators, repair, construction, and operating crew members, stockers, and sales clerks)
(8) Sanitary maintenances ( )
(Housekeepers, janitors, etc.)
(9) Have no training program ( )

Coding Columns

22 7. What methods or formats are used in training programs?

(1) Classes ( )
(2) Short courses ( )
(3) Institutes ( )
(4) Workshops ( )
(5) Conference ( )
(6) Conventions ( )
(7) Seminars ( )
(8) On-the-job training or apprenticeships ( )
(9) None, this is left to the discretion of the program planner ( )
(0) Have no training program ( )

23 8. What teaching techniques are used?

(1) Lectures ( )
(2) Symposiums ( )
(3) Panels ( )
(4) Forums ( )
(5) Film forums ( )
(6) Buzz sessions ( )
(7) Skits ( )
(8) Role playing ( )
(9) Discussion groups ( )
(0) Demonstrations ( )

24 9. What facilities are used for training programs?

(1) Company facilities ( )
(2) Nearby public school facilities ( )
(3) Nearby colleges ( )
(4) Local municipal buildings ( )
(5) Other (please specify)_____

25 10. Does your company have special classroom or laboratories for training purposes? Yes 1 ( ) No 2 ( )

26 11. If yes, are they equipped with teaching devices? Yes 1 ( ) No 2 ( )

27 12. What devices?

(1) Projection:
Movie ( )
Overhead ( )
Slides ( )
Film strip ( )
Opaque ( )
(2) Blackboard ( )
(3) Charts, maps, etc. ( )
(4) Laboratory equipment ( )
(5) Other (please describe)

_____
_____
_____

28 13. Where do you secure instructors?

(1) Your company ( )
(2) Community colleges ( )
(3) State Dept. of Education ( )
(4) Colleges and universities outside ( )
(5) Other (please describe)

_____
_____

Coding Columns

29 14. Are persons within the company who are being utilized as instructors given any special training in the act of teaching adults? Yes 1 ( ) No 2 ( )

30 15. Is participation in the training program mandatory? Yes 1 ( )
No 2 ( )

31 16. What kind of encouragement do you give employees to pursue formal courses?

(1) On-the-job time for training or educational activities ( )
(2) Cost of tuition or course fees ( )
(3) Cost of books and supplies ( )
(4) Other (please describe) _____

32 17. Is there any charge for programs conducted and/or organized by your firm? Yes 1 ( ) No 2 ( )

33 18. Do you provide special training for employees who in turn train other employees? Yes 1 ( ) No 2 ( )

34 19. What is the usual arrangement for certain employees training other employees?

(1) Train executives to train managers ( )
(2) Train managers to train supervisors ( )
(3) Train supervisors to train operatives ( )
(4) Other arrangements (please describe) _____

35 20. Do you anticipate at any time a need for training in the following areas?

(1) Orientation of new employees ( )
(2) Upgrading old employees ( )
(3) Retraining employees for new and different jobs ( )
(4) Preparing employees for retirement ( )
(5) Other (please specify) _____